

$y = 15 \text{ м}$
 $a = -100 \text{ м}$
 $f_1 = 105$
 $f_2 = 20$

$$\omega = -\arctan\left(\frac{y'}{a}\right) = 8,54^\circ$$

№8

Харитонов В
РПЗ-52



$$r_1 = 52,5$$

$$r_2 = \infty$$

$$d = 20$$

$$n_1 = 1$$

$$n_2 = 1,5$$

$$n_3 = 1$$

Параметр	Почтовый значение	Значение из условия
l	10,15	30
x	88,65	60
y	2,44	1,5

№2

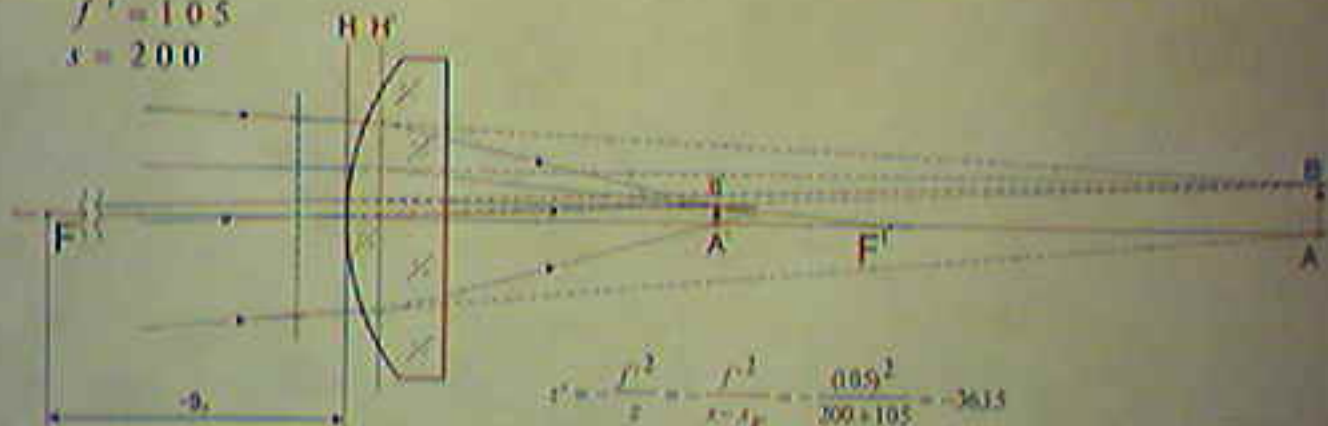
Харченко В.
РГЗ-52

$$s_F = -10,5$$

$$s'_F = 91,67$$

$$f' = 10,5$$

$$s = 200$$



$$s' = -\frac{f'^2}{s} = -\frac{f'^2}{s - s'_F} = -\frac{10,5^2}{200 - 91,67} = -36,15$$

$$x = \frac{1}{\frac{1}{f'} - \frac{1}{s}} = \frac{1}{\frac{1}{f'} - \frac{1}{s - s'_F}} = \frac{1}{\frac{1}{f'} - \frac{1}{s - s'_F} + \frac{1}{s'_F}} = \frac{1}{\frac{1}{10,5} - \frac{1}{200 - 91,67} + \frac{1}{91,67}} = 88,65$$

$$y = 3\beta = -y \frac{f'}{s} = -y \frac{f'}{s - s'_F} = -10 \frac{-10,5}{200 - 91,67} = 3,44$$

$$r_1 = -30$$

$$r_2 = -69,7$$

$$d = 10$$

$$n_1 = 1$$

$$n_2 = 1,5$$

$$n_3 = 1$$

$$s_F = 109,5$$

$$s_{F'} = -127,77$$

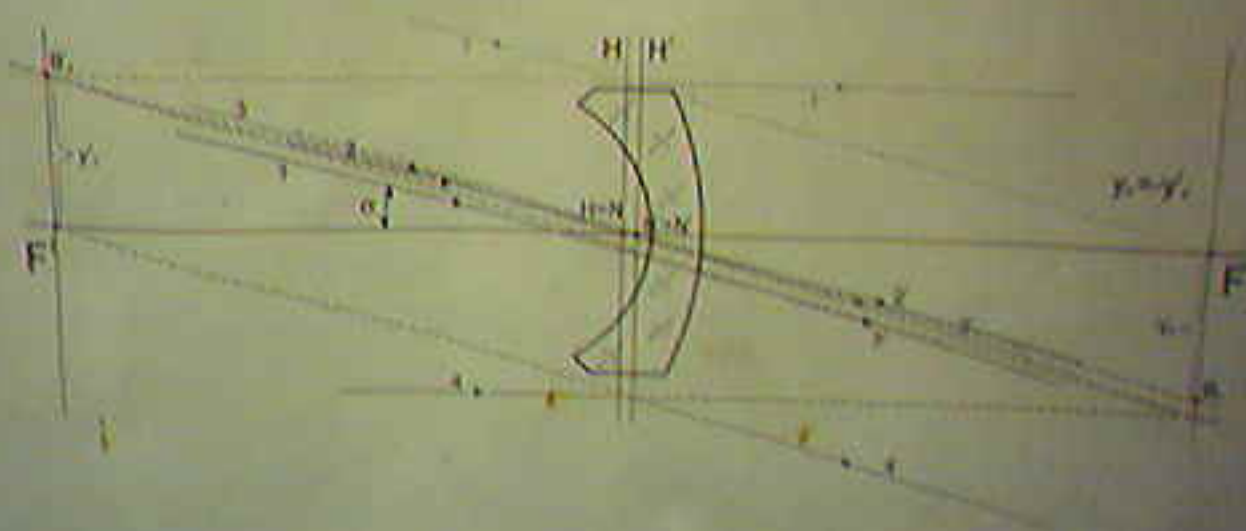
$$f' = -115$$

$$h = -5$$

$$\alpha = 15^\circ$$

№6

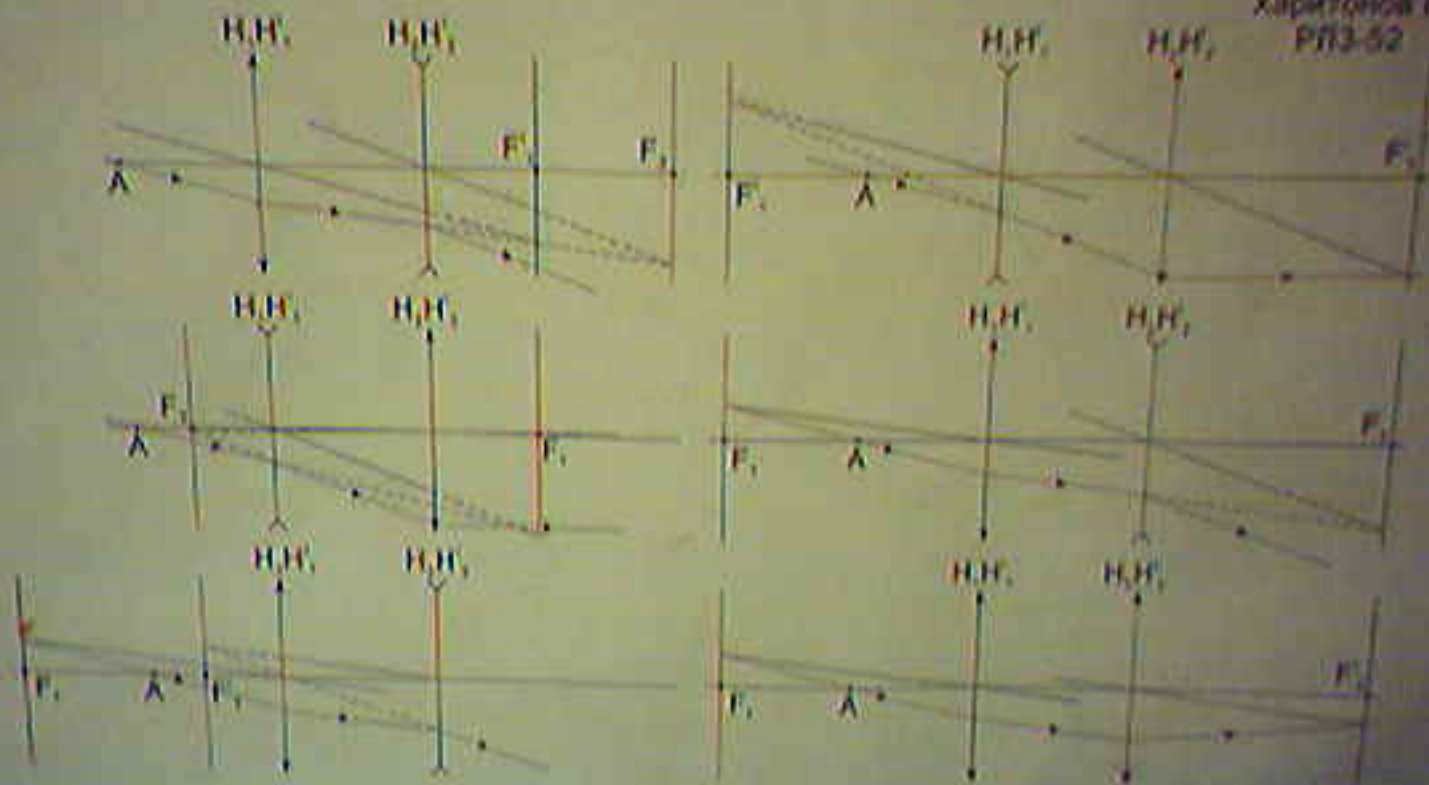
Харитонов В
1913-52



$|F_1| = 50$ $|F_2| = 45$ $d = 30$ $a_1 = -25$ $\alpha_1 = 15^\circ$

№7

Харитонов В
РЛЗ-52



$$r = 25$$

$$r_1 = 82,96$$

$$d = 20$$

$$n_1 = 1$$

$$n_2 = 1,5$$

$$n_3 = 1$$

Площадь	Радиус кривизны	Расстояние от центра
r	-82,96	145
r_1	-82,96	45
r_2	15,44	11,8

№1

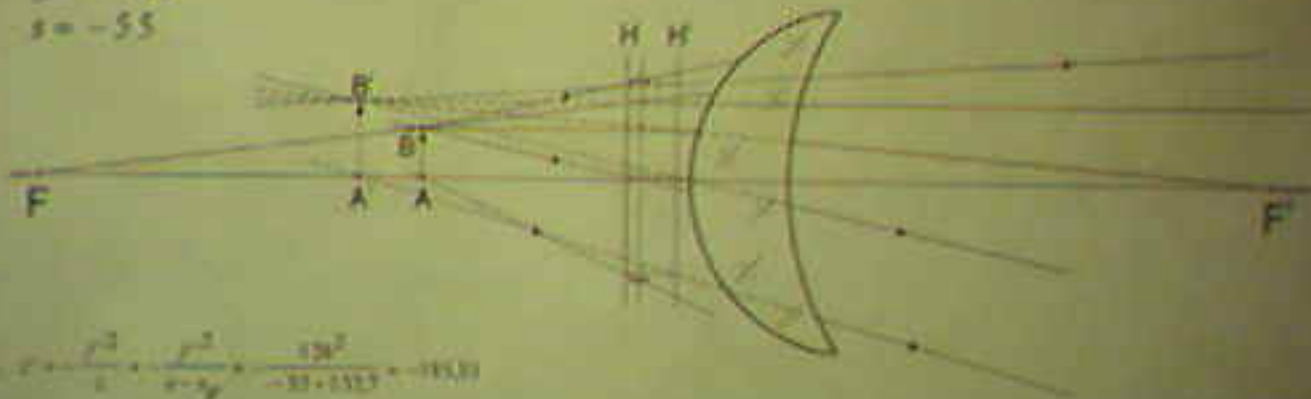
Харитоненко Е.
P73-57

$$s_F = -132,7$$

$$s_F' = 97,14$$

$$f' = 120$$

$$s = -55$$



$$s = \frac{f^2}{f'} = \frac{120^2}{-132,7} = -110,31$$

$$\frac{1}{s} = \frac{1}{s'} + \frac{1}{f'} = \frac{1}{-110,31} + \frac{1}{120} = \frac{1}{-45,31}$$

$$s' = -45,31 = \frac{f'}{s} = \frac{120}{-2,65} = -45,31$$